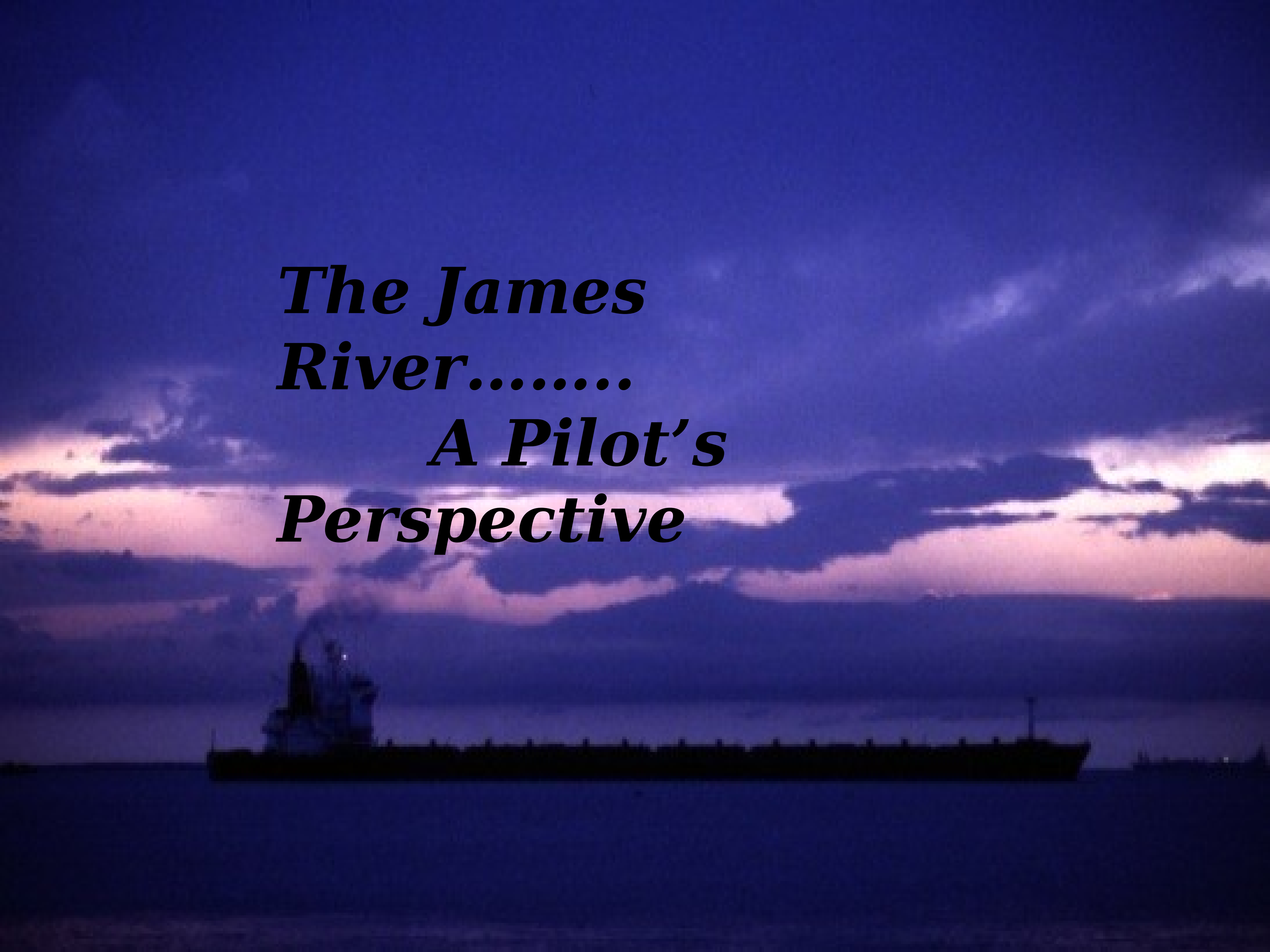
The James River........ A Pilot’s Perspective



INDEPENDENT TRADER

CHIEF
ASC 300

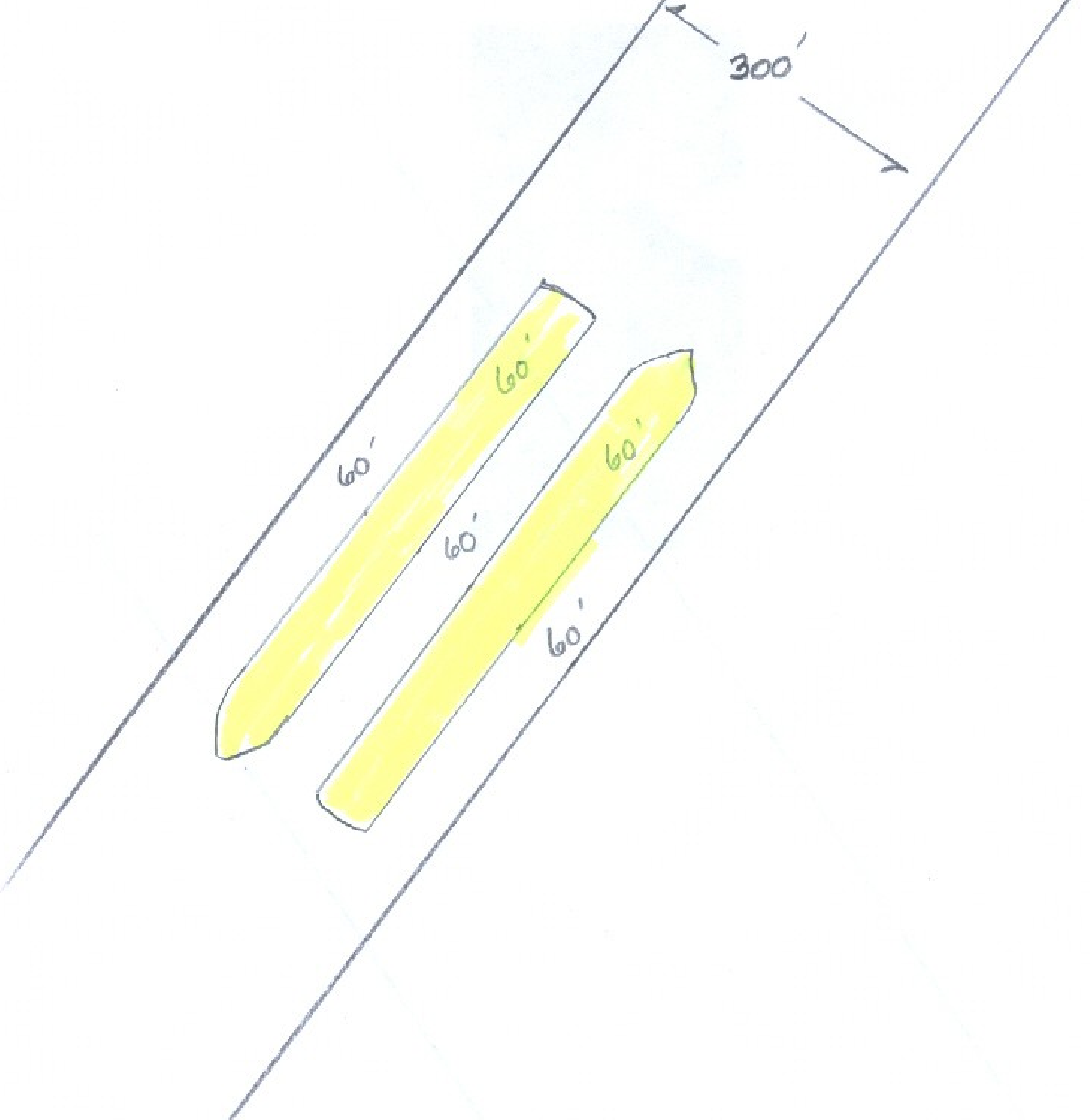
M 843

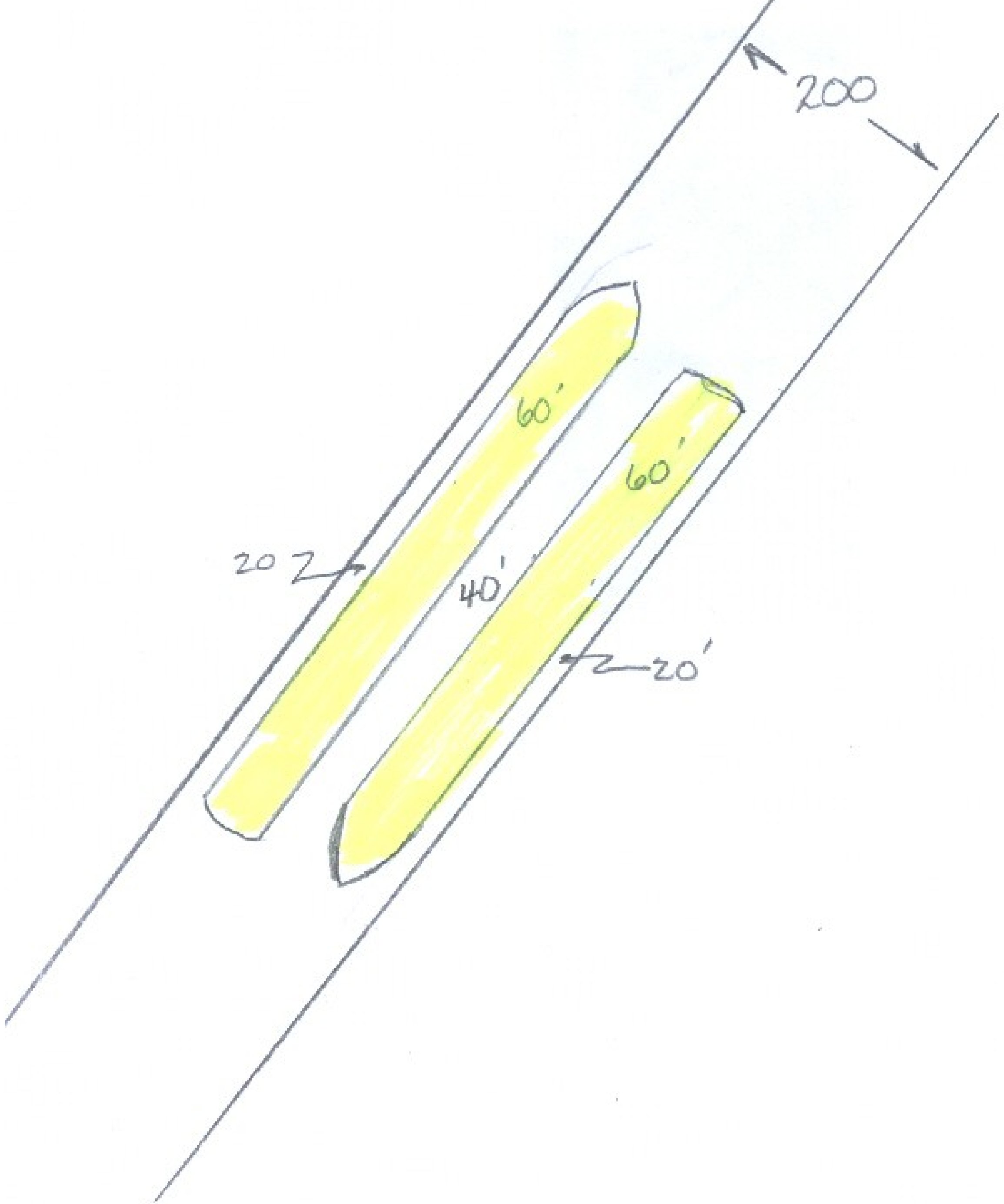
WILLIAMSBURG

RICHMOND
DWAR 1127
COTTRELL CONTRACTING CORPORATION
CHESAPEAKE, VIRGINIA

CAI

JANET D





166m tanker 'Morlone'
Loaded at slow ahead

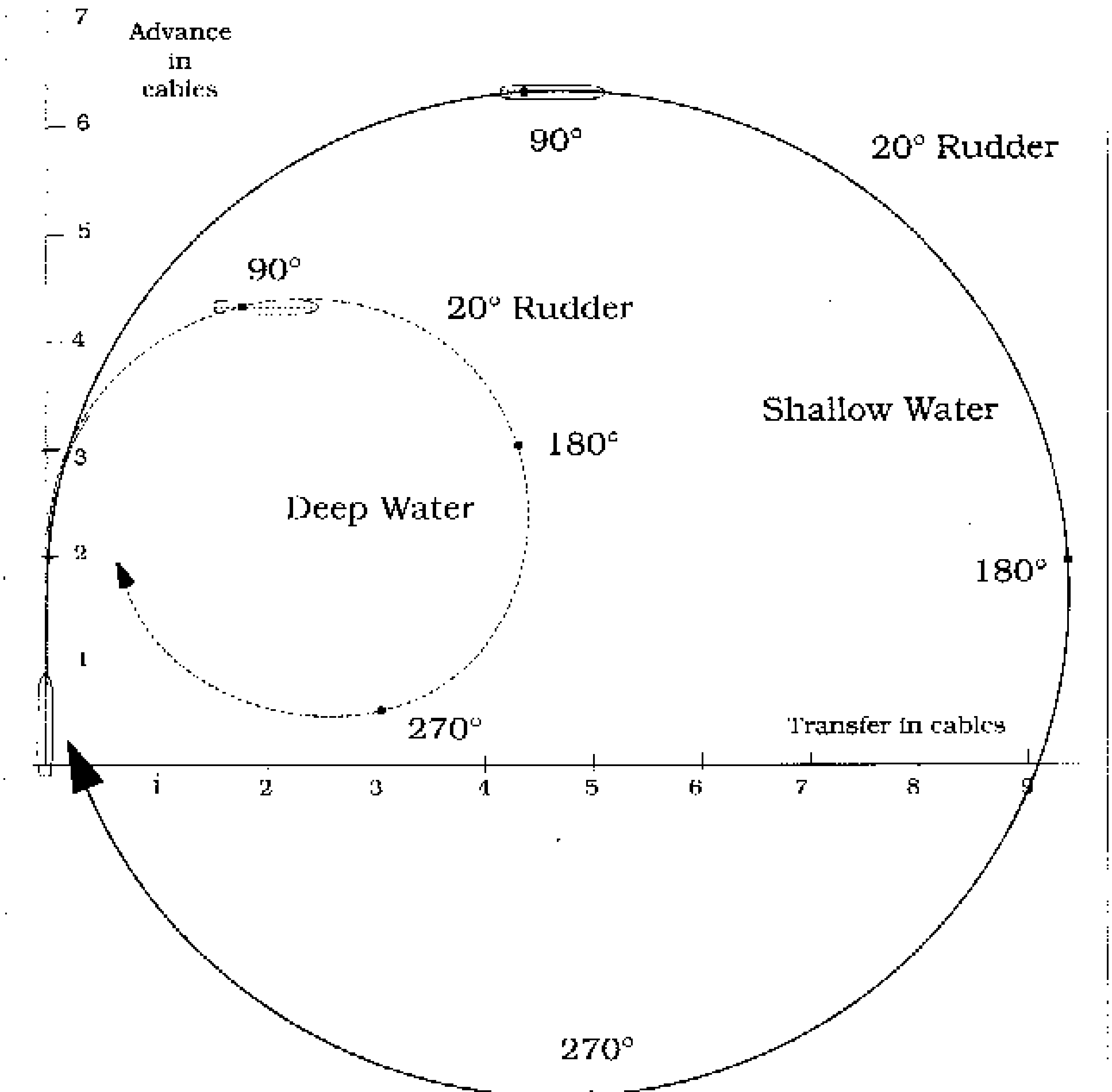
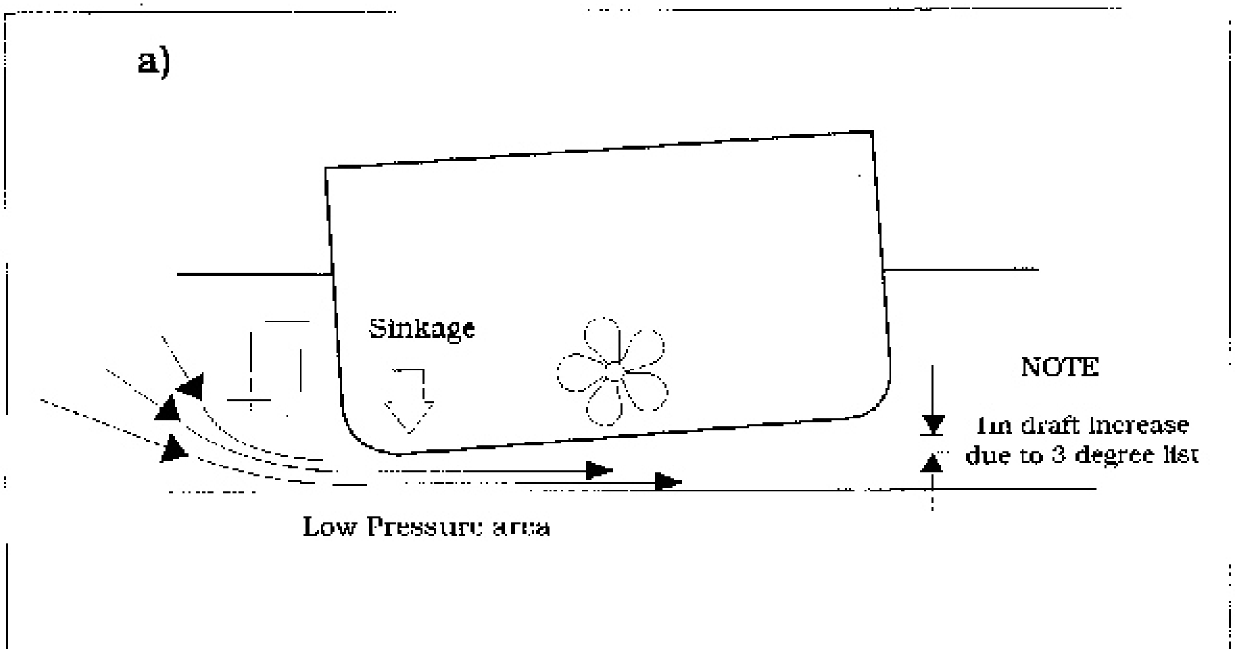
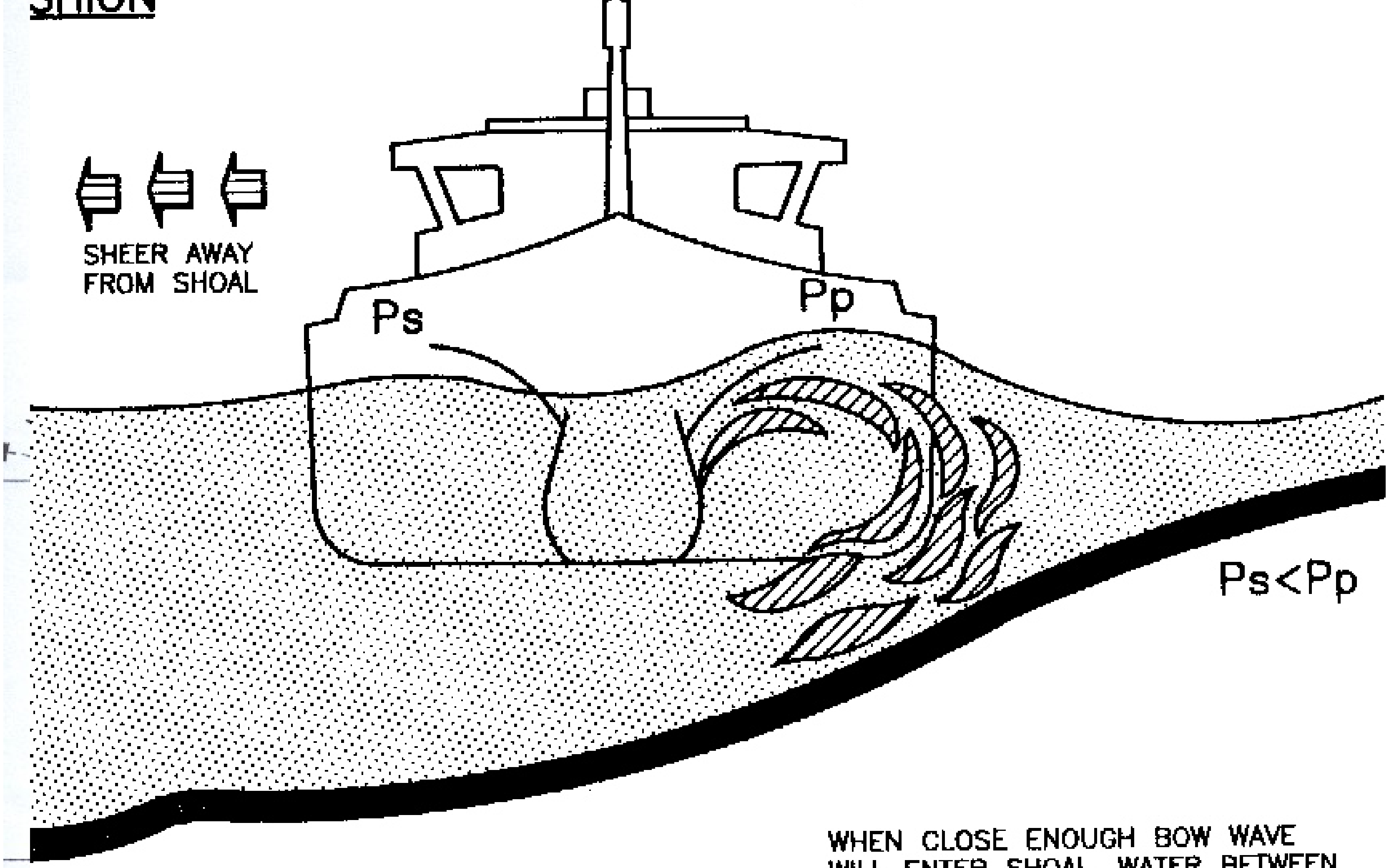

Advance in cables
7
6
5
4
3
2
1
90°
20° Rudder
90°
20° Rudder
Shallow Water
180°
Deep Water
180°
270°
Transfer in cables
1
2
3
4
5
6
7
8
9
270°

Fig. 12 Effect of Shallow Water on Turning

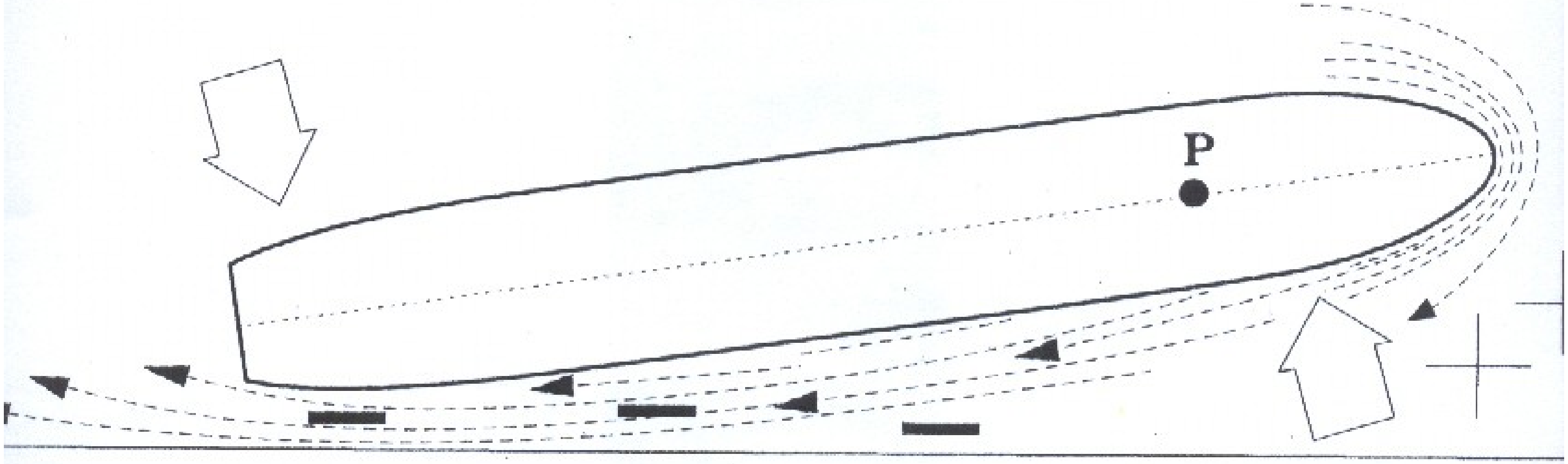

a)
Sinkage
NOTE
1m draft increase
due to 3 degree list
Low Pressure area

SHION

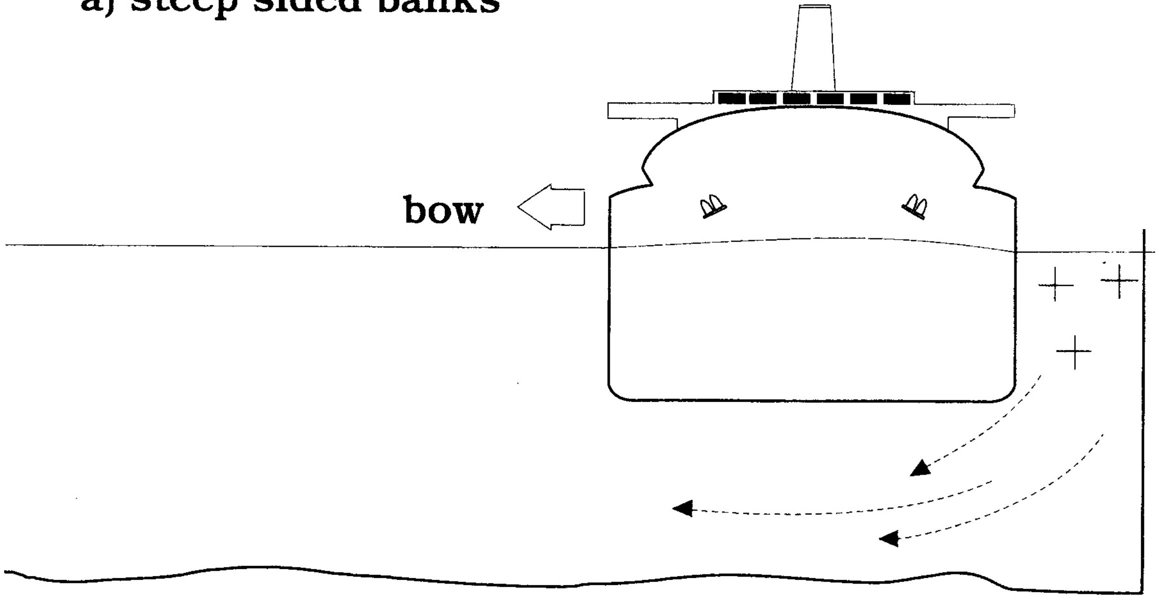

SHEER AWAY FROM SHOAL
Ps
Pp
Ps<Pp

/ESSEL CLOSING ON A SHOAL
.Y NULLIFY "CUSHION"
)MENTUM

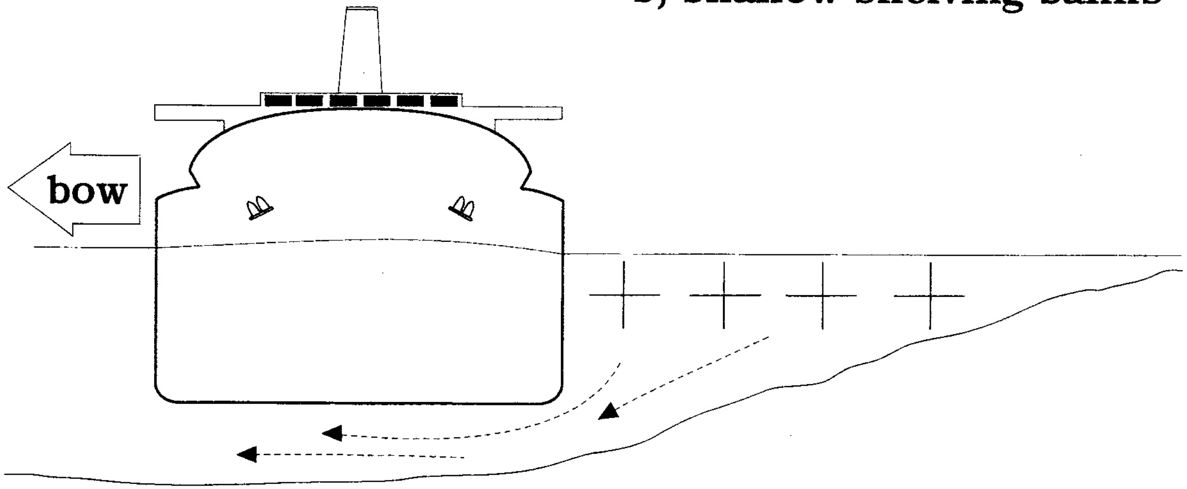
WHEN CLOSE ENOUGH BOW WAVE WILL ENTER SHOAL. WATER BETWEEN SHIP AND SHOAL "CUSHIONS" BOW AWAY. BOW WAVE ENLARGES WHEN RESTRICTED BY THE SHOAL MAKING WATER LEVEL AND PRESSURE GREATER ON SHOAL SIDE

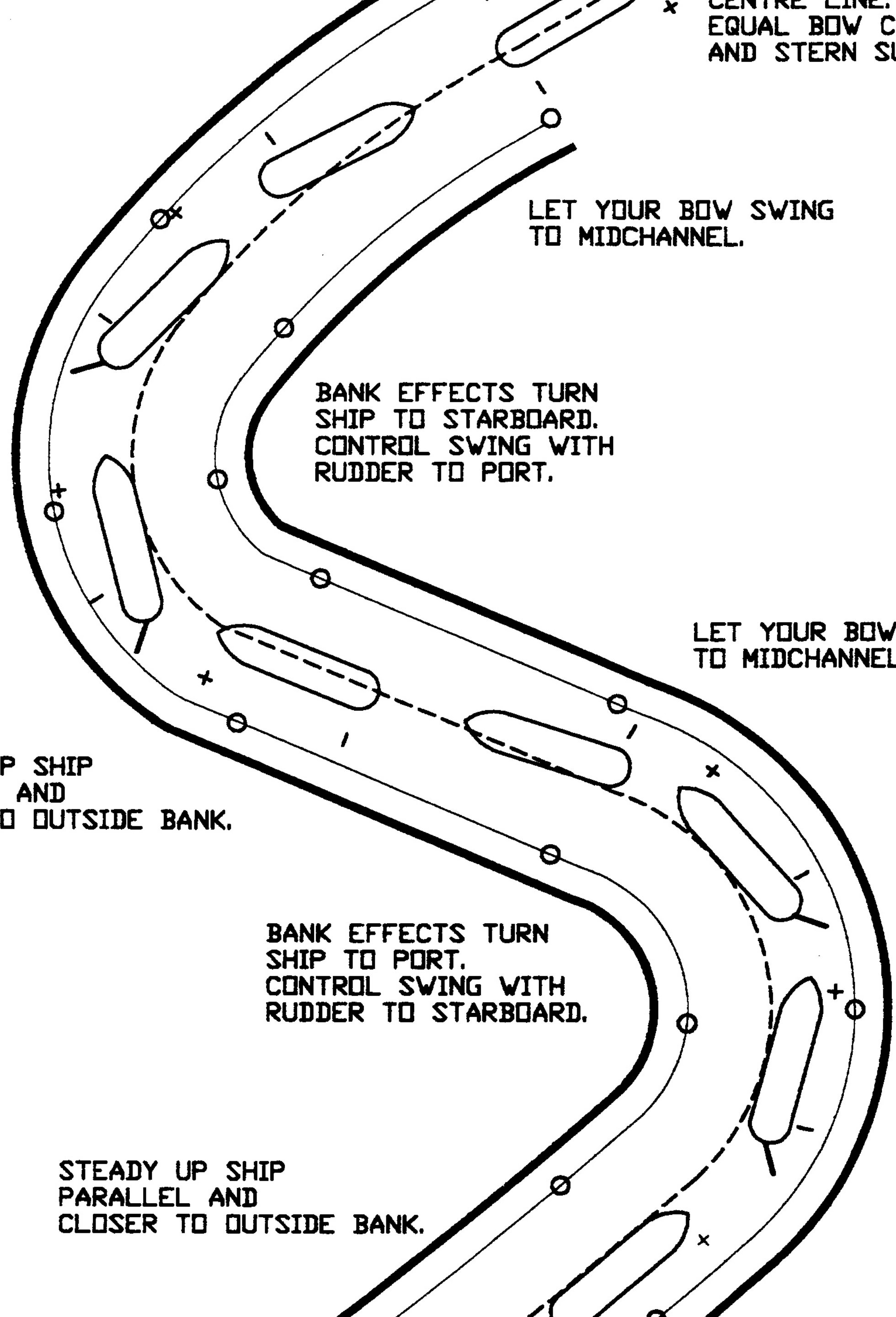
P
Suction area
High pressure

a) steep sided banks



b) shallow shelving banks





CENTRE LINE.
EQUAL BOW CUSHIONS
AND STERN SUCTIONS.

LET YOUR BOW SWING
TO MIDCHANNEL.

BANK EFFECTS TURN
SHIP TO STARBOARD.
CONTROL SWING WITH
RUDDER TO PORT.

LET YOUR BOW SWING
TO MIDCHANNEL.

STEADY UP SHIP
PARALLEL AND
CLOSER TO OUTSIDE BANK.

BANK EFFECTS TURN
SHIP TO PORT.
CONTROL SWING WITH
RUDDER TO STARBOARD.

STEADY UP SHIP
PARALLEL AND
CLOSER TO OUTSIDE BANK.

CAI

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CAPITAL

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CAI
CAPITAL
CAI IP
SEA STAR

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TRIU 907133

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CAUTION 9'6 HIGH

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CAPITAL
CAPITAL

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US 4510
MAX GROSS
TARE
PAYLOAD
CU CAP
ICUU 996077 0
45G1
CAUTION

SWAN

CAI
CAPITAL

CAI
CAPITAL

CAI
CAPITAL

CAI
CAI IP

CAI
CAPITAL
GENSTAR

CAPITAL
CAI
CAI IP

MITSUBISHI
8
7
6

CAI

CAI

167.07 M
548'02"
148.07 M
485'08"
19.0 M
62'04"

167.07 M
548'02"
148.07 M
485'08"
19.0 M
62'04"

PILOT
OLD DOMINION
VA BEACH, VA

The End